

Revised Guidelines for the Selection of Wildlife Sites in Shropshire



April 2010



Amendments to this edition		
Date	Change	By Whom
15/04/2008	Page numbers added and this table added	Colin Wright SWT
16/07/2009	Hay meadows criteria adjusted	Fiona Gomersall SWT
April 2010	Habitat Connectivity and Nationally'/locally rare criteria added.	Robin Mager SWT

Background

What is a Wildlife Site?

A “Wildlife Site” is a site which is considered to be of importance for nature conservation on the geographical scale of a county, or, in some cases, its current equivalent in local authority jurisdiction (eg: unitary authority area). Wildlife Sites are the most important places for wildlife outside legally protected land such as SSSIs.

In some instances Wildlife Sites will also be of geological interest. However, Wildlife Sites are selected primarily for their wildlife value and there are other non-statutory site systems in existence for geological sites. For more information refer to the Shropshire Geological Society and their system of designating Regionally Important Geological Sites (RIGS).

Although the term “Wildlife Site” has now been widely adopted, these sites are sometimes referred to by other names (such as Sites of Importance for Nature Conservation, Sites of Nature Conservation Importance and Second Tier Sites). In Shropshire they were formerly called Prime Sites for Nature Conservation.

Together with RIGS County Wildlife Sites are classified as ‘Local sites’.

Selection of Wildlife Sites

In general, throughout the UK, Wildlife Sites (or their equivalent) are selected following evaluation of their nature conservation value against local guidelines or criteria. Sites are eligible for selection if they meet certain minimum standards.

This document sets out guidelines for the selection of Wildlife Sites in Shropshire, which comprises the Unitary authority areas of Shropshire Council and Telford and Wrekin Council.

National Policy relating to selection of Wildlife Sites

The key policies relating to selection of Wildlife Sites are contained with Planning and Policy Statement 9 Biodiversity and Geological Conservation (ODPM August 2005) which states:

Key Principles ii

In taking decisions local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance....”

Paragraph 9 Regional and Local Sites

“Sites of regional and local biodiversity and geological interest, which include Regionally Important Geological Sites, Local Nature Reserves, and Local Sites, have a fundamental role to play in meeting overall national biodiversity targets; contributing to the quality of life and the well-being of the community; and in supporting research and education. Criteria-based policies should be established in local development documents against which proposals for any development on, or affecting, such sites will be judged. These policies should be distinguished from those applied to nationally important sites.”

Local Sites: Guidance on their Identification, Selection and Management (Defra 2006)

These recently published guidelines provide guidance on the development and management of systems to identify sites of local importance for nature conservation in England. It deals with the management of Local Site systems for biodiversity and geological conservation which complement the series of internationally and nationally designated wildlife and geological sites.

County Policy relating to selection of Wildlife Sites

There appears to no policy or rationale in the Shropshire and Telford & Wrekin Joint Structure Plan 1996-2011 (adopted November 2002) relating specifically to the selection of Wildlife Sites. The Plan simply states that "The Shropshire Wildlife Trust has identified 841 Wildlife Sites of local and county wide importance in the Structure Plan area. Although these are non-statutory designations they are considered important to local communities and as "stepping stones" for the spread of habitat and species." This will, in part be replaced by a Local Development Framework for the unitary borough of Telford and Wrekin in 2007.

The local authorities of Bridgnorth District Council, Shrewsbury & Atcham District Council, South Shropshire District Council, Oswestry Borough Council and North Shropshire District Council have Local Plans which include policies which relate the protection of Wildlife Sites and recognise their importance as a material consideration when making planning decisions. Each Local Plan is accompanied by a Proposals Map which show in differing detail the location of Wildlife Sites. Most extant Local Plans are now being superseded by Local Development Frameworks.

Guidelines for selection

Introduction

The following guidelines set out what is considered to constitute “substantive nature conservation value” in a Shropshire context.

The guidelines are based primarily on criteria first used by Ratcliffe (1977) to identify key national sites and which have generally formed the basis for nature conservation evaluation systems since then. The main criteria used here are size, diversity, rarity, naturalness and typicalness. How these criteria are applied varies between habitats and species/species groups. For more detail on these criteria refer to The Wildlife Sites Handbook (The Wildlife Trusts, 1997).

In order to qualify/quantify the guidelines in a Shropshire context (for example the rarity of a particular species in Shropshire), reference is made to a number of existing documents. Where information is lacking, certain of the guidelines apply an expert, but subjective, assessment of what constitutes a “substantive nature conservation interest” for the county.

In recognition of the importance of wildlife to people, and more fundamentally their need to engage with it in order to appreciate and become involved in its conservation, a set of criteria to cover the social aspect of wildlife sites has been incorporated. These criteria supplement and add weight to the nature conservation value of a site. They elaborate on Ratcliffe’s Criteria and on the social criteria, sections 10.1 & 10.2 of the previously adopted selection criteria. They are based on those currently in use by the Wildlife Trust for Birmingham & Black Country and we acknowledge their kind permission to adapt them for use in Shropshire.

Defining “Site Boundaries”

Habitats

In many cases the boundary of the area of habitat(s) considered eligible for selection will be an obvious physical feature (eg: a field boundary). However, in some cases, habitats of significant nature conservation value may comprise only part of a field, or an area with no clear physical boundary. In these instances the Wildlife Site boundary will generally follow a clear feature on the ground (such as a field boundary) and thus may encompass areas of habitat of lower nature conservation value. In such instances, this will be noted.

Where the boundary of a Wildlife Site comprises linear habitat (eg: hedgerow, ditch, dry stone wall) this will normally be included within the Site as additional habitat. Where boundaries are of high nature conservation value in their own right this should be noted (see also habitat mosaics below).

Species

The boundary of a site required for the conservation of species, can be problematic, especially for highly mobile species (for example certain bird and bat species).

As a general rule:

- the boundary should encompass all habitat at the recorded location of the species considered likely to be required for its conservation.
- the boundary will often follow physical features on the ground in a similar way to that described for habitats above.

Details are given under the appropriate species guidelines.

Habitat Guidelines

Initially habitat types were based on those originally defined by the Nature Conservancy Council in 1990, commonly known as Phase 1 habitat types. These have recently been revised slightly to reflect the work by the United Kingdom Biodiversity Steering Group to identify priority habitats and species for urgent conservation action, and the growing body of work to meet the targets set out in the more local Shropshire Biodiversity Action plan. As our knowledge of the plant communities for each site increases through the use of the National Vegetation Classification system we are able to provide a more accurate quantification of the resource of each of these habitats and allow for monitoring of progress against BAP targets. Taking into account the past history of site survey in the County and the various methodologies used, the habitat types below are perhaps best described as a hybrid of NCC, NVC and BAP systems.

Note that some areas of habitat which are not eligible for selection under the following habitat guidelines may qualify for selection under the species guidelines.

Woodland, scrub and trees

The following are considered eligible for selection:

Broadleaved semi-natural woodland:

- All ancient semi-natural woodland (ASNW) included in the provisional Shropshire Inventory of Ancient Woodlands (AWI) (Carter, 1988) that retains a semi-natural structure and species composition could be selected.
- Semi-natural woodland not recorded in the AWI but believed to be ancient and more than 1ha in extent.
- Semi-natural woodland not recorded in the AWI and not necessarily believed to be ancient but which support more than 0.5ha of wet woodland (ie: typical examples of NVC Communities W1-W7).

Currently a 'representative sample' of ASNW sites has been selected for designation as County Wildlife Sites owing to the relatively large number of woodlands in this category in the county.

Plantation:

Plantation woodland on an ancient woodland site (PAWS) (either included in the AWI or believed to be an ancient woodland site) which retains significant features characteristic of ASNW eg:

- a good number of vascular plant species generally associated with ancient woodland (examples listed in Carter, 1988) widespread throughout the site;
- frequent mature/over-mature broadleaved trees which pre-date replanting;
- significant patches of semi-natural vegetation (in the canopy, shrub layer and/or field layer).

Veteran Trees/Parkland with scattered trees:

Groups of open-grown, large, mature/over-mature, site-native trees occurring in parkland or other habitat.

Grassland

The following are considered eligible for selection:

Lowland & Upland Acid Grassland

Acid (calcifugous) grassland which supports a good number of plant species indicative of agriculturally unimproved acid grasslands (as listed in Table 1, Appendix 1). Examples should normally be at least 5ha in extent. However, examples of the U1 NVC acid grassland community over 0.5ha in extent can also be considered.

Lowland Meadows

Neutral (mesotrophic) grassland which supports a good number of plant species indicative of agriculturally unimproved and species-rich neutral grasslands (as listed in Table 2, Appendix 1). Examples should normally be at least 0.5ha in extent, although smaller areas (over 0.1ha) of notably species-rich swards can also be considered.

Lowland Calcareous grassland

Calcareous grassland which supports a good number of plant species indicative of agriculturally unimproved and species-rich calcareous grasslands (as listed in Table 3, Appendix 1). Examples should normally be at least 0.5ha in extent, although smaller areas (over 0.1ha) of notably species-rich swards can also be considered.

Species-rich haymeadows

Guidelines previously meant that sites had to have six habitat indicator species (axiophytes) which meant many good meadows were left undesignated.

Criteria used by Defra in their assessment of grassland sites was trialled on previously selected sites (using the threshold of 15-16 plants per m²) which worked well in identifying meadows with abundance of one or more axiophytes such as Yellow Rattle, but did not support the six axiophytes required for designation under the neutral species rich grassland criteria.

This has enabled the selection of many more, mainly MG5 meadows to be selected, with the proviso that species present should include at least 20 of the characteristic grasses and other plants listed in Appendix 1/ record of 16 + (total of all) species in quadrat.

Floodplain Grazing Marsh

Marsh/marshy grassland which supports a good number of plant species indicative of unimproved marshy grasslands (as listed in Table 5, Appendix 1). Examples should normally be at least 0.5ha in extent, although smaller areas (over 0.1ha) of notably species-rich swards can also be considered.

Lowland & Upland Heathland

All dry, and/or wet, dwarf shrub heath greater than 0.25ha in extent is considered eligible for selection.

Fen, Marsh & Swamp Habitats

Bog, Fen and Flush

All bog, fen and flush habitat greater than 0.1ha in extent is considered eligible for selection.

Swamp

All swamp habitat greater than 0.1ha in extent is considered eligible for selection.

Standing open water

The following standing open water types are considered eligible for selection:

All oligotrophic, standing water greater than 0.01ha (100 sq m) in extent.

All eutrophic and mesotrophic waterbodies which score 'high' or 'very high' when assessed using the methodology set out in the national pond survey (Pond Action, 1998).

Running open water

Stretches of watercourses where the bed and banks are largely unmodified, the water is not grossly polluted by long-term sources and which support characteristic semi-natural aquatic, emergent and bankside vegetation communities (ie: dominated by communities of native plant species) are considered eligible for selection.

Note that the usual boundary to any such site would be the break of slope, thus including the bank-side habitat, but semi-natural riparian habitat directly associated with, and immediately adjacent to, the watercourse could also be included in the Wildlife Site (see also habitat mosaics below).

Habitat Mosaics

A Wildlife Site may comprise a combination of habitats where the habitats together attain substantive nature conservation value.

A site is considered eligible for selection on the basis of its habitat mosaic where:

Two or more of the above habitats are narrowly excluded from selection in their own right but occur adjacent to one another.

One or more of the above habitats is narrowly excluded from selection in its own right but occurs adjacent to eligible habitat.

Where the following additional habitats occur :

- scrub (comprising primarily of site-native species);
- tall herb and fern comprising primarily of site-native species);
- marginal and inundation vegetation comprising primarily of site-native species);
- natural rock exposures;
- hedgerows (comprising primarily site-native species).

These can be included in the Wildlife Site, but they should comprise less than 25% of the total site area.

Habitat connectivity

Sites or linear features can be considered for selection provided that at least one of the following applies:

- It provides an appropriate 'corridor' or habitat connectivity between, or close to, two or more other Wildlife Sites, or other notable sites.
- It provides a significant extent of habitat in a part of the county otherwise deficient in such habitat.
- It constitutes part of the "ghost" outline of a former habitat extent and retains some of the characteristic flora and/or fauna (e.g. wood banks, old river beds, etc.)
- It provides linkages between known populations of priority species that would otherwise be unacceptably isolated.

Species Guidelines

Table 5 (Appendix 2) gives more detailed definitions of some of the status terminology for each species group. Individual species lists are not included here since these are constantly under review. The most up-to-date data references should be used to determine which species (and their sites) meet the guidelines. The most recent references/sources of species lists are given in Appendix 2.

Non-vascular and vascular plants

Sites/habitat which support a Nationally Rare (Red Data Book) Nationally Scarce or Locally Rare species are considered eligible for selection. Such sites when proposed, or supported, by the County Recorder or Recording Group should be viewed as very strong candidates.

Invertebrates

Butterflies and moths

Sites which support an extant small, medium or large population of a nationally important species and its breeding habitat are considered eligible for selection.

Sites which support an extant medium or large population of a regionally important species and its breeding habitat are considered eligible for selection.

Status Term	Definition	Species data
Nationally Important	<p>UK BAP Priority Species and Priority Species Candidates</p> <p><u>Butterflies</u> Dingy Skipper Grizzled Skipper Wood White White-letter Hairstreak Silver-studded Blue White Admiral Small Pearl-bordered Fritillary Pearl-bordered Fritillary Wall Grayling Large Heath</p> <p><u>Moths</u> Argent & Sable Common Fan-foot Drab Looper</p> <p>NB this list only includes species which will have a full action plan in the UK BAP. Although Small Copper and Small Heath are also currently UK BAP candidates they will be joining 71 moths on a widespread but rapidly declining plan.</p>	The State of Butterflies in Britain and Ireland Fox et al., 2006
Regionally Important	Regional Action plan High and Medium Priority Species	Butterfly Conservation West Midlands Regional Action Plan

	<u>Butterflies</u> Dark Green Fritillary Silver-washed Fritillary Brown Argus Green Hairstreak <u>Moths</u>	(update Joy <i>et al.</i> , <i>in prep.</i>)
Extant	Known site for the species which has been recorded here within the last three years.	
Population size	Small 2-5 adults Medium 6-20 adults Large 20+ adults	

Dragonflies/damselflies

Sites which support populations of any species considered to be 'Vulnerable' are considered eligible for selection.

Sites/habitats which support populations of a good number of dragonfly/damselfly species are considered eligible for selection.

Ladybirds

Most Ladybird species are not specialists and are found in diverse habitats. The majority of species are described as widespread including those classified as locally common or scarce. With the exception of one recent immigrant only the one rare species has a specific habitat.

Accordingly, only the Five-spot ladybird *C. 5-punctata* would appear to justify a site where it was found, being classified as a Wildlife Site.

(See appendix 2 for further information on Ladybirds in Shropshire).

Hoverflies

The known presence of two or more species from List 1 and/or three or more species from List 2 would indicate a potentially good quality site – certainly a site worth investigating further, in order to establish its quality. Four or more species from Lists 1 and 2 together should reliably indicate a high quality site.

Species on List 3 probably have less value as site quality indicators, but the presence of List 3 species, alongside those from Lists 1 and 2, would certainly add to the value of a site.

- European woodland quality indicators – species considered important in a European context.

(See Appendix 2 for list of species).

- Species in the Biodiversity Action Plan (BAP)
Hoverfly species included in Priority Habitats in England.

Major ecological themes:-

- a) Saprophytic habitat (rotting wood, water-filled rot holes and sap runs)
- b) Wetland (of various types)
- c) Phytophagous (plant eating)
- d) Ant associations (in various habitats)
- e) Brown field ruderal habitat is not given Priority status. *Cheilosia velutina* is in the list for Lowland calcareous grassland but its main habitat would appear to be brownfield.

(See Appendix 2 for list of species)

- English hoverflies not allocated to Priority Habitats, but possibly useful for site quality evaluation.

(See Appendix 2 for list of species).

This suite of Hoverfly indicator species has been drawn from a list compiled by Buglife. Species indicated in bold type are those species known to occur in Shropshire, or nearby in neighbouring counties. These occurrences are based on modern or historic records held by the Hoverfly Recording Scheme. Shropshire is a relatively under recorded county, so there is a very strong possibility of finding in Shropshire, numerous further species on this list. On the other hand, some species are highly unlikely to occur in the county, but I have retained these on the list, pending further consideration.

Other invertebrate groups

Sites/habitat which support a Nationally Rare (Red Data Book) or Nationally Notable 'a' species are considered eligible for selection.

Amphibians

Great crested newt

Waterbodies supporting a 'good breeding population' of great crested newt are considered eligible for selection. Suitable terrestrial habitat within 250m (and likely access to it, if remote) should also be considered for inclusion in the Wildlife Site.

Qualifying waterbodies within 250m of each other could be aggregated into a single Wildlife Site, together with any suitable intervening terrestrial habitat.

Amphibians (cont.)

Other amphibians

The following are considered eligible for selection:

- Waterbodies supporting breeding populations of four or more native amphibian species.
- Waterbodies supporting 'good breeding populations' of any three native amphibian species.
- Waterbodies supporting 'exceptional breeding populations' of any single species of native amphibian.

As in the great crested newt criteria, suitable terrestrial habitat within 250m (and likely access to it, if remote) should also be considered for inclusion in the Wildlife Site and qualifying waterbodies within 250m of each other could be aggregated into a single Wildlife Site.

Reptiles

Sites/habitat supporting two or more native reptile species are considered eligible for selection.

Birds

- Any site that regularly supports 0.1% or more of the total British breeding population, or 1% or more of the total Shropshire breeding population, of any native species.
- The largest colonies in the county of any colonially nesting species (e.g. herons, sand martins, house martins and swifts) should also be selected, but only if no sites meet the first criteria.
- Any site that regularly supports 0.1% or more of the total British non-breeding population, or 1% or more of the total Shropshire non-breeding population, of any species at any season.
- Any site which supports a breeding bird assemblage with a total score, calculated from tables below, which equals or exceeds the threshold site index values shown in the table.
- Any site which supports a regular breeding population of a rare or scarce Shropshire breeding bird species or a notable assemblage of species in a county context.*
- Any site consisting of semi-natural habitats with at least 50 breeding species or at least 65 wintering species, or where at least 110 species are recorded during the year. **

Notes

For all criteria, the records used should be no more than five years old and the 'population' of a species should be based on an average of the maximum number recorded for at least three years out of the previous five years at the time of selection. Following selection, species should be recorded every five years to confirm status.

The tables (see Appendix 3) used for selecting sites under the fourth criteria replicate those used for the selection of SSSIs except for the exclusion of species that are not likely to ever occur in the county as a breeding species (e.g. golden eagle) or are unlikely to occur but, if they did, the occurrence would ensure site selection anyway (e.g. wryneck). The Shropshire Index Value has been set at a level to select sites which have a very strong representation of the characteristic species along with one or two species that are much less common in the county

*Sites selected using the fifth criteria are likely to be for specific Schedule 1 species, sites for species at the edge of their range in Shropshire or sites which, in a Shropshire context, support significant assemblages of breeding waders, wintering wildfowl etc.

**The threshold figures used in the sixth criteria are approximately 75% of the figures used nationally.

Mammals

The following are considered eligible for selection:

- Sites/habitat supporting breeding populations of dormouse or water vole.
- All otter breeding holts.
- Sites which regularly support 'significant' breeding or wintering bat roosts.

Social Criteria

Access

The existence of paths, formal or informal, entry points and other signs of recreation indicate a de facto use and thus demand for access. It is desirable for people to have access to a natural open space within a reasonable distance of their homes. Where the site has access, the larger the number of people living within this distance of a site, the more value it has for access. Conversely, uncontrolled access to a site may be harmful to its nature conservation interest.

Aesthetic Quality

Views into and out of a site should be considered. Features that provide a seasonal high point such as a carpet of bluebells, heather in bloom, autumn colour, annual flower meadows, a winter scene should be considered for their contribution to aesthetic value.

Physical Value

Nature conservation sites can provide opportunities for informal exercise such as walking, cycling, jogging, children's play and practical habitat management work in a setting of natural greenspace.

Social Value

Natural open space offers valuable opportunities to meet others and socialise with like-minded neighbours. The wider range of uses by way of sex, age, ethnic background or special needs, the greater the site's social value.

Sense of Ownership

Sites may be highly regarded by the owners or users. They are likely to be more sustainable than those without, if that regard can be translated into action. The sense of ownership that the landowner of a site has can be of great value especially in terms of the sympathetic management of the site.

Educational Value – Formal and Informal

Nature conservation sites can provide an actual or potential resource for use by educational establishments at all levels. This should be taken into account. A warden scheme and the provision of special facilities or materials may enhance this value. Size, access, safety and sensitivity also need to be taken into account.

Sites are often a focus for action by the community. The site's role in the development of skills by involvement in its protection, management and recording can enhance its value.

Recorded History

A history of natural, management and historical records for a site adds considerably to its interest and helps to provide a picture of how a site has changed and the factors causing this. Sites mentioned by pioneer workers or otherwise featured in early published works, or sites of significance in the economic or social history and development of a region are of special value.

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Appendix 1 – Habitat Indicator Species

1. Ancient Semi-natural Woodland

(*Acer campestre* – Field Maple)

***Adoxa moschatellina* – Moschatel**

***Allium ursinum* – Wild Garlic**

***Anemone nemorosa* – Wood Anemone**

(*Arum maculatum*– Lords and Ladies)

Blechnum spicant – Hard Fern

***Bromopsis benekenii* – Lesser Hairy-brome**

***Bromopsis ramosa* – Wood Brome**

Campanula latifolia – Great Bellflower

***Campanula trachelium* – Nettle-leaved Bellflower**

Carex laevigata – Smooth-stalked Sedge

Carex pallescens – Pale Sedge

Carex pendula – Pendulous Sedge

Carex remota – Remote Sedge

***Carex strigosa* – Thin-spiked Wood-sedge**

***Carex sylvatica* – Wood Sedge**

Chrysosplenium alternifolium –Alternate-leaved Golden-saxifrage

Chrysosplenium oppositifolium – Opposite-leaved Golden-saxifrage

(*Convallaria majus* – Lily of the Valley)

(*Cornus sanguinea* – Dogwood)

Daphne laureola – Spurge-laurel

Dipsacus pilosus – Small Teasel

Dryopteris carthusiana – Narrow Buckler-fern

***Dryopteris affinis* agg. – Scaly Male Fern**

Elymus caninus – Bearded Couch

Epipactis helleborine – Broad-leaved Helleborine

***Epipactis leptochila* – Narrow-lipped Helleborine**

***Epipactis phyllanthes* – Green Flowered Helleborine**

***Epipactis purpurata* – Violet Helleborine**

Equisetum sylvaticum – Wood Horsetail

Euonymus europaeus – Spindle

Euphorbia amygdaloides – Wood-spurge

***Festuca altissima* – Wood Fescue**

Festuca gigantea – Giant Fescue

(*Fragaria vesca* – Wild Strawberry)

Gagea lutea – Yellow Star-of-Bethlehem)

***Galium odoratum* – Sweet Woodruff**

Geranium sylvaticum – Wood Crane’s-bill

Geum rivale – Water Avens)

Gnaphalium sylvaticum – Heath Cudweed

(*Helleborus foetidus* – Stinking Hellebore)

(*Helleborus viridis* – Green Hellebore)

***Hordelymus europaeus* – Wood Barley**

***Hyacinthoides non-scripta* - Bluebell**

Hypericum androsaemum – Tutsan

(*Ilex aquifolium* – Holly)

Iris foetidissima – Stinking Iris

***Lamiastrum galeobdolon* ssp. *Montanum* – Yellow Archangel**

***Lathraea squamaria* - Toothwort**

Lathyrus sylvestris – Narrow-leaved Everlasting Pea

Listera ovata - Twayblade

Luzula pilosa – Hairy Woodrush

Luzula sylvatica – Great Woodrush

***Lysimachia nemorum* – Yellow Pimpernel**

Malus sylvestris sensu stricto – Crab Apple

1. Ancient Semi-natural Woodland (cont)

Melampyrum pratense – Common Cow-Wheat

***Melica nutans* – Mountain Melick**

***Melica uniflora* – Wood Melick**

Mercurialis perennis – Dog's Mercury)

Milium effusum – Wood Millet

Moerhingia trinervia – Three-veined Sandwort

(*Myosotis sylvatica* – Wood Forget-me-not)

Narcissus pseudonarcissus ssp. *Pseudonarcissus* – Wild Daffodil

***Neottia nidus-avis* – Bird's-nest Orchid**

Oreopteris limbosperma – Lemon Scented-fern

***Orchis mascula* – Early-purple Orchid**

***Oxalis acetosella* – Wood Sorrel**

***Paris quadrifolia* – Herb Paris**

Planathera chlorantha – Greater Butterfly-orchid

Poa nemoralis – Wood Meadow-grass

Polygonatum multiflorum – Solomon's Seal

Polystichum setiferum – Soft Shield-fern

Polystichum aculeatum – Hard Shield fern

(*Populus tremula* – Aspen)

Potentilla sterilis – Barren Strawberry

***Primula vulgaris* – Primrose**

(*Prunus avium* – Cherry)

(*Quercus petraea* – Sessile Oak)

Ranunculus auricomus – Goldilocks

***Sanicula europaea* – Sanicle**

Scirpus sylvaticus – Wood Club-rush

Solidago virgaurea - Goldenrod

***Sorbus torminalis* – Wild Service Tree**

(*Stachys officinalis* – Betony)

Taxus baccata – Yew

Tilia cordata – Small Leaved Lime

Tilia platyphyllos – Large Leaved Lime

(*Ulmus glabra* – Wych Elm)

***Veronica montana* – Wood Speedwell**

Viburnum opulus – Guelder Rose

Vicia sylvatica – Wood Vetch

Viola reichenbachiana – Early Dog-violet

Bold typeface= strong indicator.

Plants in brackets = weak indicators, sometimes introduced

First published by the Shropshire Botanical Society in spring 2003

2. Grassland

U1 grasslands, sandy soils etc.

2.1 Lowland and upland acid grasslands

Species present are likely to include a number of the characteristic grasses and plants listed below.

Two species should be at least frequent and four occasional:

Swards dominated by, or containing an abundance of grasses such as:

Aira praecox – Early Hair-grass
Agrostis capillaris – Common Bent
Agrostis canina – Brown Bent
Danthonia decumbens – Heath Grass
Deschampsia flexuosa – Wavy-hair Grass
Festuca ovina – Sheep's Fescue
Nardus stricta – Mat-grass

And containing flowering plants such as:

Achillea millefolium – Yarrow
A. ptarmica – Sneezewort
Anagallis minima – Chaffweed
Aphanes spp – Parsley Piert
Calluna vulgaris - Ling
Campanula rotundifolia- Harebell
Carex spp – sedge species
Conopodium majus - Pignut
Dactylorhiza maculata - Heath Spotted-orchid
Empetrum nigrum - Crowberry
Erica cinerea – Bell Heather
E. tetralix – Cross-leaved Heath
Erodium moschatum - Musk Stork's-bill
E. cicutarium – Common Stork's-bill
Filago minima - Small Cudweed
Jasione Montana – Sheep's Bit
Galium saxatile – Heath Bedstraw
Genista anglica - Petty Whin
Gentianella campestris – Field Gentian
Juncus squarrosus – Heath Rush
Lotus corniculatus – Bird's Foot Trefoil
Luzula campestris – Field Wood-rush
L. multiflora - Heath Wood-rush
Moenchia erecta - Upright Chickweed
Myosotis discolor – Changing forget-me-not
M. ramosissima – Early forget-me-not
Orobanche rapum-genistae - Greater Broomrape
Pedicularis sylvatica - Lousewort
Plantago coronopus - Buck's-horn Plantain
Polygala serpyllifolia - Heath Milkwort
Potentilla argentea - Hoary Cinquefoil
P. erecta - Tormentil
Rumex acetosella – Sheep's-sorrel
Serratula tinctoria – Saw-wort
Stachys officinalis - Betony
Teesdalia nudicaulis – Shepherd's cress
Trifolium micranthum - Slender Trefoil
Vaccinium myrtillus – Bilberry
Veronica officinalis – Heath Speedwell

Flora group U1 list

Festuca ovina-*Agrostis capillaris*-*Rumex acetosella* grassland
Erophila verna – Common Whitlowgrass
Pilosella officinarum – Mouse-ear-hawkweed
Ornithopus perpusillus – Bird's-foot
Cerastium semidecandrum – Little Mouse-ear
C. arvense – Field Mouse-ear
C. diffusum – Dark Green Mouse-ear
C. fontanum – Common Mouse-ear
C. glomeratum – Sticky Mouse-ear
Thymus polytrichus – Wild Thyme
Aphanes microcarpa – Slender Parsley-piert
Dianthus deltoids – Maiden Pink (?)
Plantago coronopus – Buck's-horn plantain
Filago minima – Small Cudweed
Trifolium striatum – Knotted Clover
Sedum forsterianum – Rock Stonecrop
Hypochaeris glabra – Smooth Cat's-ear
Viola canina - Heath Dog-violet
V. lutea – Yellow Mountain pansy

2.2 Neutral Grasslands and Lowland Meadows

The MG meadows – MG5 mainly – but also MG4

Species present are likely to include a number of the characteristic grasses and plants listed below, two species should at least be frequent and four, occasional:

Swords containing grasses and sedges such as:

Aira caryophylla - Silver Hair-grass
Agrostis canina – Brown Bent
A. capillaris - Common Bent
Alopecurus geniculatus- Marsh Fox-tail
A. pratensis – Meadow Fox-tail
Anthoxanthum odoratum – Sweet Vernal Grass
Bromus racemosus - Smooth Brome (?)
Briza media – Quaking Oat Grass
Carex disticha - Brown Sedge
C. pallescens - Pale Sedge
Cynosurus cristatus – Crested Dog's Tail
Dianthus deltoides - Maiden Pink
Festuca rubra – Red fescue
Phleum bertolonii – Small- leaved Timothy
Trisetum flavescens – Yellow Oat- Grass

And containing flowering plants such as:

Achillea millefolium - Yarrow
Agrimonia eupatoria - Agrimony
Alchemilla spp - Lady's-mantle
Cardamine pratensis – Lady's-Smock
Centaurea nigra – Black Knapweed
Colchicum autumnale - Meadow Saffron
Conopodium majus - Pignut
Dactylorhiza spp - Marsh and Spotted- orchids
Euphrasia officinalis agg. - Eyebright
Filipendula ulmaria – Meadowsweet
Galium verum – Lady's Bedstraw
Genista tinctoria – Dyer's Greenweed
Geranium pratense – Meadow Crane's-bill
Hypericum pulchrum - Slender St John's-Wort
Hypochaeris radicata – Cat's-ear
Knautia arvensis – Field Scabious
Lathyrus linifolius - Bitter Vetch
L. pratensis – Meadow Vetchling
Leontodon autumnalis – Autumn Hawkbit

2.2 Neutral Grasslands and Lowland Meadows (cont)

Leucanthemum vulgare – Ox-eye Daisy
Linum catharticum - Fairy Flax
Lotus corniculatus – Common Bird's-foot-trefoil
Luzula campestris – Greater Bird's-foot-trefoil
Medicago lupulina – Black Medick
Myosotis discolor - Changing Forget-me-not
Ononis spinosa - Spiny Restharrow
Ophioglossum vulgatum - Adder's Tongue
Orchis mascula - Early Purple Orchid

O. morio – Green-winged Orchid
Pilosella officinalis – Mouse-ear Hawkweed
Pimpinella saxifraga - Burnet-saxifrage
Polygala spp. - Milkworts
Potentilla erecta - Tormentil
Primula veris - Cowslip
Prunella vulgaris- Self-heal
Ranunculus acris – Meadow Buttercup
Rhinanthus minor - Yellow-rattle
Sanguisorba minor - Salad Burnet
S.officinalis - Great Burnet
Serratula tinctoria – Saw-wort
Silaum silaus - Pepper-saxifrage
Stachys officinalis - Betony
Succisa pratensis - Devil's-bit Scabious
Tragopogon pratensis - Goat's-beard
Veronica chamaedrys - Germander Speedwell

2.3 Lowland calcareous grasslands

The CG grasslands – base-rich, underlain by limestone or lime-rich clays. Grasslands of interest are CG2, CG3? and CG6.

Species present are likely to include a number of the characteristic grasses and plants listed below, if CG2, then four species should be at least frequent and three occasional; if CG6, then two species should at least be frequent and two occasional :

Swords containing grasses and sedges such as:

A. caryophyllea - Silver Hair-grass
Carapodium rigidum - Fern-grass
Carex muricata ssp. *Muricata* - Prickly Sedge
C. caryophyllea - Spring Sedge
C. flacca - Glaucous Sedge
Helictotrichon pubescens – Hairy Oat-grass
Briza media – Quaking Oat-grass
Bromopsis erecta – Upright Brome
Festuca ovina – Sheep's Fescue
Helictotrichon pubescens - Downy Oat-grass
Poa compressa - Flattened Meadow-grass
Trisetum flavescens - Yellow Oat-grass

And containing flowering plants such as:

Agrimonia eupatoria - Agrimony
Anacamptis pyramidalis - Pyramidal Orchid
Anthyllis vulneraria - Kidney Vetch
Arenaria serpyllifolia - Thyme-leaved sandwort
Blackstonia perfoliata - Yellow-wort
Bortrychium lunaria - Moonwort
Campanula trachelium - Nettle-leaved Bellflower
Carlina vulgaris - Carlina Thistle
Centaurea scabiosa - Greater Knapweed
Cirsium acaule - Dwarf Thistle
C. dissectum - Meadow Thistle
C. eriophorum - Woolly Thistle
Clinopodium acinos - Basil Thyme
C. ascendens - Common Calamint
C. vulgare - Wild Basil
Coeloglossum viride - Frog Orchid
Dactylorhiza spp - Spotted and Marsh Orchids
Echium vulgare - Viper's Bugloss
Filipendula vulgaris - Dropwort
Galium verum - Lady's Bedstraw
Gentianella amarella - Autumn Gentian
G. campestris - Field Gentian
Gymnademium conopsea - Fragrant Orchid
Helianthemum nummularium - Common Rock-rose
Hieracium pilosella - Mouse-ear Hawkweed
Hypericum montanum - Pale St. John's-wort
Inula conyzae - Ploughman's-spikenard

2.3 Lowland calcareous grasslands (cont)

Knautia arvensis – Field Scabious
Leontodon hispidus - Rough Hawkbit
L. saxatilis – Lesser Hawkbit
Linum catharticum - Fairy Flax
Lithospermum officinale - Common Gromwell
Lotus corniculatus - Bird's-foot-trefoil
Medicago lupulina - Black Medick
Ononis repens - Restharrow
Ophrys apifera - Bee Orchid
Origanum vulgare - Wild Marjoram
Pimpinella saxifrage - Burnet Saxifrage
Plantago media - Hoary Plantain
Platanthera chlorantha - Greater Butterfly-orchid
Polygala vulgaris - Common Milkwort
Primula veris - Cowslip
Rhinanthus minor - Yellow-rattle
Rosa micrantha - Small-flowered Sweet Briar
Samolus valerand - Brookweed
Sanguisorba minor - Salad Burnet
Scabiosa columbaria - Small Scabious
Sherardia arvensis - Field madder
Solidago virgaurea - Goldenrod
Spiranthes spiralis - Autumn Lady's-tresses
Succisa pratensis – Devil's-bit Scabious
Thymus pulegioides - Large Thyme
T. polytrichus – Wild Thyme
Viola hirta – Hairy Violet

2.4 Species-rich haymeadows

The MG meadows – mainly MG5

Surveyors should record 15 + species in 1metre square quadrat excluding Perennial rye grass and White clover:

Swards containing grasses and sedges such as:

***Aira caryophyllea* - Silver Hair-grass**
Agrostis canina – Brown Bent
***A. capillaris* - Common Bent**
Alopecurus geniculatus- Marsh Fox-tail
A. pratensis – Meadow Fox-tail
Anthoxanthum odoratum – Sweet Vernal Grass
Bromus racemosus - Smooth Brome
Briza media – Quaking Oat Grass
***Carex disticha* - Brown Sedge**
***C. pallescens* - Pale Sedge**
Cynosurus cristatus – Crested Dog's Tail
Festuca rubra – Red fescue
Phleum bertolonii – Small- leaved Timothy
***Trisetum flavescens* – Yellow Oat-Grass**

And containing other flowering plants such as:

Achillea millefolium - Yarrow
Agrimonia eupatoria - Agrimony
***Alchemilla glabra* - Lady's-mantle**
***Alchemilla xanthochlora* - Lady's-mantle**
Cardamine pratensis – Lady's-Smock
Centaurea nigra – Black Knapweed
***Colchicum autumnale* - Meadow Saffron**
Conopodium majus - Pignut
***Dactylorhiza* spp - Marsh and Spotted- orchids**
Euphrasia officinalis agg. - Eyebright
Filipendula ulmaria – Meadowsweet
Galium verum – Lady's Bedstraw
***Genista tinctoria* – Dyer's Greenweed**
Geranium pratense – Meadow Crane's-bill
***Hypericum pulchrum* - Slender St John's-Wort**
Hypochaeris radicata – Cat's-ear
Knautia arvensis – Field Scabious
***Lathyrus linifolius* - Bitter Vetch**
L. pratensis – Meadow Vetchling
Leontodon autumnalis – Autumn Hawkbit
Leucanthemum vulgare – Ox-eye Daisy
***Linum catharticum* - Fairy Flax**
Lotus corniculatus – Common Bird's-foot-trefoil
Lotus pedunculatus – Greater Bird's-foot-trefoil
Medicago lupulina – Black Medick
***Myosotis discolor* - Changing Forget-me-not**
***Ononis spinosa* - Spiny Restharrow**
***Ophioglossum vulgatum* - Adder's Tongue**
***Orchis mascula* - Early Purple Orchid**
***O. morio* – Green-winged Orchid**

Pilosella officinalis – Mouse-ear Hawkweed
***Pimpinella saxifraga* - Burnet-saxifrage**
Plantago lanceolata – Ribwort Plantain
***Polygala serpyllifolia* -Heath Milkwort**
Polygala vulgaris – Common Milkwort
Potentilla erecta - Tormentil
***Primula veris* - Cowslip**
Prunella vulgaris- Self-heal
Ranunculus acris – Meadow Buttercup
Ranunculus bulbosus – Bulbous Buttercup
***Rhinanthus minor* - Yellow-rattle**
***Rumex acetosa* – Common Sorrel**
***Sanguisorba minor* - Salad Burnet**
***S.officinalis* - Great Burnet**
***Serratula tinctoria* – Saw-wort**
***Silaum silaus* - Pepper-saxifrage**
***Stachys officinalis* – Betony**
Stellaria graminea – Lesser Stitchwort
Succisa pratensis - Devil's-bit Scabious
Tragopogon pratensis - Goat's-beard
Trifolium pratense – Red Clover
Veronica chamaedrys - Germander Speedwell

2.5 Floodplain grazing Marsh

The MG4 and MG8, MG11 and MG13 grasslands

Species present are likely to include a number of the characteristic grasses and plants listed below, two species should be frequent and four at least occasional:

Swards not completely dominated by species such as:

Agrostis stolonifera – Creeping Bent
Holcus lanatus – Yorkshire Fog
*Juncus acutiflorus**- Sharp- flowered Rush
*J. effusus** -Soft Rush
Molinia caerulea – Purple- moor Grass

And containing a range of species such as:

Achillea ptarmica -Ssneezewort
Angelica sylvestris - Angelica
Caltha palustris – Marsh-marigold
Cardamine pratensis – Cuckoo-flower
C. disticha - Brown Sedge
C. echinata – Star Sedge
C. flacca – Glaucous Sedge
C. hirta- Hairy Sedge
C. nigra – Common Sedge
C. ovalis – Oval Sedge
C. panacea – Carnation Sedge
C. pulicaris – Flea Sedge-
C. vesicaria - Bladder-sedge
Carex viridula – Yellow Sedge
Cirsium dissectum – Meadow Thistle
Dactylorhiza spp – Marsh and Spotted Orchids
Epilobium palustre – Marsh Willowherb
Filipendula ulmaria - Meadowsweet
Galium palustre – Common Marsh-bedstraw
Hydrocotyle vulgaris – Marsh Pennywort

Iris pseudacorus – Yellow Iris
Juncus subnodulosus – Blunt-flowered rush
Lotus pedunculatus – Greater Bird's-foot-trefoil
Luzula spp – Wood-rush species
Lychnis flos-cuculi – Ragged Robin
Lythrum salicaria – Purple-loosestrife
Mentha aquatica –Watermint
Myosotis laxa – Tufted Forget-me-not
Pedicularis spp – Lousewort species
Persicaria hydropiper – Water-pepper
P. minor - Small Water-pepper
Potentilla erecta - Tormentil
P. palustris – Marsh Cinquefoil
Pulicaria dysenterica - Common Fleabane
Ranunculus flammula – Lesser Spearwort
Succisa pratensis – Devil's-bit Scabious
Scutellaria spp - Skullcap
Senecio aquaticus - Marsh Ragwort
Serratula tinctoria – Saw-wort
Stellaria uliginosa – Bog Stitchwort

2.5 Floodplain grazing Marsh (cont)

Thalictrum flavum - Common Meadow-rue
Triglochin palustre, Marsh Arrowgrass
Valeriana spp – Valerian species
Viola palustris – Marsh Violet

3. Upland & Lowland Heathland

Blechnum spicant - Hard Fern
Carex binervis - Green-ribbed Sedge
C. echinata - Star Sedge
C. hostiana - Tawny Sedge
C. laevigata - Smooth-stalked Sedge
C. Montana - Soft-leaved Sedge
C. pilulifera - Pill Sedge
C. pulicaris - Flea Sedge
C. viridula - Yellow Sedge
Ceratocarpus claviculata - Climbing Corydalis
Dactylorhiza maculata - Heath Spotted-orchid
Dryopteris carthusiana - Narrow Buckler-fern
Empetrum nigrum - Crowberry
Equisetum sylvaticum - Wood Horsetail
Erigeron acer - Blue Fleabane
Eriophorum angustifolium - Common Cottongrass
E. vaginatum - Hare's-tail Cottongrass
Genista anglica - Petty Whin
Gentiana pneumonanthe - Marsh Gentian
Gnaphalium sylvaticum - Heath Cudweed
Gymnocarpium dryopteris -Oak Fern
Hypericum pulchrum -Slender St. John's-wort
Jasione montana - Sheep's-bit
Littorella uniflora - Shoreweed
Luzula multiflora - Heath Wood-rush
L. sylvatica - Great Wood-rush
Lycopodium clavatum - Stag's-horn Clubmoss
Melampyrum pratense - Common Cow-wheat
Oreopteris limbosperma - Lemon-scented Fern
Orobanche rapum-genistae - Greater Broomrape
Pedicularis sylvatica - Lousewort
Pinguicula vulgaris - Common Butterwort
Platanthera bifolia - Lesser Butterfly-orchid
Polygala serpyllifolia - Heath Milkwort
Salix aurita - Eared Willow
S. pentandra - Bay Willow
S. repens - Creeping Willow
S. x multinervis - a Willow
Trichophorum cespitosum - Deergass
Vaccinium oxycoccos - Cranberry
V. vitis-idaea - Cowberry

5. Wetland Habitats

Species present are likely to include a number of the characteristic plants listed below, two species should be at least frequent and three occasional:

5.1 Fen

Anagallis tenella - Bog Pimpernel
Calamagrostis canescens - Purple Small-reed
C. epigejos - Wood Small-reed
Carex disticha - Brown Sedge
C. elata -Tufted Sedge
C. elongata - Elongated Sedge
C. paniculata - Greater Tussock-sedge
C. pseudocyperus - Cyperus Sedge
C. vesicaria - Bladder-sedge
C. viridula - Yellow Sedge
Cicuta virosa - Cowbane
Cirsium dissectum - Meadow Thistle
Cladium mariscus - Great Fen-sedge
Crepis paludosa - Marsh Hawk's-beard
Dactylorhiza praetermissa - Sothern Marsh-orchid
D. purpurella - Northern Marsh-orchid
Epipactis palustris - Marsh Helleborine
Eriophorum angustifolium - Common Cottongrass
E. latifolium - Broad-leaved Cottongrass
E. vaginatum - Hare's-tail Cottongrass
Galium uliginosum - Fen Bedstraw
Geum rivale -Water Avens
Gymnadenia conopsea - Fragrant Orchid
Hypericum elodes - Marsh St. John's-wort
Isolepis setacea - Bristle Club-rush
Juncus foliosus - Leafy Rush
J. subnodulosus - Blunt-flowered Rush
Linum catharticum - Fairy Flax
Lysimachia vulgaris - Yellow Loosestrife
Menyanthes trifoliata - Bogbean
Oenanthe fistulosa -Tubular Water-dropwort
Parnassia palustris - Grass of Parnassus
Pedicularis palustris - Marsh Lousewort
Persicaria minor - Small Water-pepper
Pinguicula vulgaris - Common Butterwort
Potentilla palustris - Marsh Cinquefoil
Pulicaria dysenterica - Common Fleabane
Ranunculus lingua - Greater Spearwort
Rumex maritimus - Golden Dock
Sagina nodosa - Knotted Pearlwort
Salix purpurea - Purple Willow
S. repens - Creeping Willow
Samolus valerandi - Brookweed
Schoenoplectus tabernaemontani - Grey Club-rush
Scirpus sylvaticus - Wood Club-rush
Senecio aquaticus - Marsh Ragwort
Stachys palustris - Marsh Woundwort
Stellaria palustris - Marsh Stitchwort
Thalictrum flavum -Common Meadow-rue
Thelypteris palustris - Marsh Fern
Triglochin palustre - Marsh Arrowgrass
Trollius europaeus - Globe-flower
Typha angustifolia - Lesser Bulrush
Valeriana dioica - Marsh Valerian
Veronica anagallis-aquatica - Blue Water-speedwell

V. catenata - Pink Water-speedwell
V. scutellata - Marsh Speedwell

5.2 Bog

Anagallis tenella - Bog Pimpernel
Andromeda polifolia - Bog-rosemary
Briza media - Quaking-grass
Carex binervis - Green-ribbed Sedge
C. curta - White Sedge
C. dioica - Dioecious Sedge
C. echinata - Star Sedge
C. hostiana - Tawny Sedge
C. lasiocarpa - Slender Sedge
C. pulicaris - Flea Sedge
C. rostrata - Bottle Sedge
C. viridula - Yellow Sedge
Crepis paludosa - Marsh Hawk's-beard
Dactylorhiza incarnate - Early Marsh-orchid
D. maculate - Heath Spotted-orchid
D. purpurella - Northern Marsh-orchid
Drosera anglica - Great Sundew
D. intermedia - Oblong-leaved Sundew
D. rotundifolia - Round-leaved Sundew
Dryopteris carthusiana - Narrow Buckler-fern
Eleocharis multicaulis - Many-stalked Spike-rush
E. quinqueflora - Few-flowered Spike-rush
Eriophorum angustifolium - Common Cottongrass
E. vaginatum - Hare's-tail Cottongrass
Frangula alnus - Alder Blackthorn
Gentiana pneumonanthe - Marsh Gentian
Hottonia palustris - Water-violet
Hypericum elodes - Marsh St. John's-wort
Isolepis setacea - Bristle Club-rush
Juncus foliosus - Leafy Rush
Linum catharticum - Fairy Flax
Littorella uniflora - Shoreweed
Lythrum portula - Water Purslane
Menyanthes trifoliata - Bogbean
Myosotis secunda - Creeping Forget-me-not
Myrica gale - Bog Myrtle
Narthecium ossifragum - Bog Asphodel
Oreopteris limbosperma - Lemon-scented Fern
Osmunda regalis - Royal Fern
Pedicularis palustris - Marsh Lousewort
P. sylvatica - Lousewort
Pinguicula vulgaris - Common Butterwort
Potamogeton polygonifolius - Bog Pondweed
Potentilla palustris - Marsh Cinquefoil
Ranunculus omiophyllus - Round-leaved Crowfoot
Rhynchospora alba - White Beak-sedge
Rubus chamaemorus - Cloudberry
Sagina nodosa - Knotted Pearlwort
Salix pentandra - Bay Willow
S. purpurea - Purple Willow
S. repens - Creeping Willow
Samolus valerandi - Brookweed
Scutellaria minor - Lesser Skullcap
Trichophorum cespitosum - Deergass
Triglochin palustre - Marsh Arrowgrass

Utricularia minor - Lesser Bladderwort
Vaccinium oxycoccos - Cranberry

5.2 Bog (cont)

Valeriana dioica - Marsh Valerian
Veronica scutellata - Marsh Speedwell
Viola palustris - Marsh Violet
Wahlenbergia hederacea - Ivy-leaved Bellflower

5.3 Standing Open Water

Alopecurus aequalis - Orange Foxtail
Apium inundatum - Lesser Marshwort
Berula erecta - Lesser Water-parsnip
Butomus umbellatus - Flowering Rush
Callitriche hermaphroditica - Annual Water-starwort
Carex acuta - Slender Tufted-sedge
C. lasiocarpa - Slender sedge
C. paniculata - Greater Tussock-sedge
C. rostrata - Bottle Sedge
Catabrosa aquatica - Whorl-grass
Cladium mariscus - Great Fen-sedge
Elatine hexandra - Six-stamened Waterwort
Eleocharis acicularis - Needle Spike-rush
Eleogiton fluitans - Floating Club-rush
Hottonia palustris - Water-violet
Hydrocharis morsus-ranae - Frogbit
Juncus foliosus - Leafy Rush
Littorella uniflora - Shoreweed
Luronium natans - Floating Water-plantain
Lythrum portula - Water Purslane
Menyanthes trifoliata - Bogbean
Myosotis secunda - Creeping Forget-me-not
Myriophyllum - alterniflorum, Alternate Water-milfoil
M. verticillatum - Whorled Water-milfoil
Nuphar pumila - Least Water-lily
Oenanthe aquatica - Fine-leaved Water-dropwort
O. crocata - Hemlock Water-dropwort
O. fistulosa - Tubular Water-dropwort
Persicaria minor - Small Water-pepper
Potamogeton alpinus - Red Pondweed
P. compressus - Grasswrack Pondweed
P. friesii - Flat-stalked Pondweed
P. obtusifolius - Blunt-leaved Pondweed
P. polygonifolius - Bog Pondweed
P. praelongus - Long-stalked Pondweed
Potentilla palustris - Marsh Cinquefoil
Ranunculus circinatus - Fan-leaved Water-crowfoot
R. fluitans - River Water-crowfoot
R. omiophyllus - Round-leaved Crowfoot
R. peltatus - Pond Water-crowfoot
R. pencillatus - Stream Water-crowfoot
R. trichophyllus - Thread-leaved Water-crowfoot
Rumex maritimus - Golden Dock
Schoenoplectus tabernaemontani - Grey Club-rush
Senecio aquaticus - Marsh Ragwort
Spirodela polyrhiza - Greater Duckweed
Stachys palustris - Marsh Woundwort

Typha angustifolia - Lesser Bulrush
Utricularia minor - Lesser Bladderwort

5.3 Standing Open Water (cont)

Veronica anagallis-aquatica - Blue Water-speedwell
V. catenata - Pink Water-speedwell
V. scutellata - Marsh Speedwell
Zannichellia palustris - Horned Pondweed

Appendix 2

Table 5: Definitions of status terminology used and data and definition sources

STATUS TERM	DEFINITION	Source of status definitions and/or species data
	Non-vascular & vascular plants	
Nationally Rare (Red Data Book)	occurring in 15 or fewer 10km squares in the Ordnance Survey national grid of Britain.	Various - eg: Wiggington, 1999
Nationally Scarce species	occurring in 16-100 10km squares in the Ordnance Survey national grid of Britain.	Various - eg: Stewart et al, 1994
Locally Rare species	occurring at three or fewer sites within Shropshire (a site being here defined as a movable 1km square or a single continuous habitat).	Lockton & Whild, 1997 (vascular plants) xx (bryophytes)
	Butterflies & Moths	
Regional high priority	<p>includes national high priority butterflies and moths and other national priority butterflies and moths fulfilling one or more of the following 4 criteria:</p> <ul style="list-style-type: none"> • rate of decline (estimated rate of decline >22% loss from particular 10km squares over 17 year period); • rarity (occupies <0.6% of the West Midlands area or there are less than 30 colonies remaining); • proportion of national resource (the region contains >20% of the national resource of the species); • any additional reasons for increasing the rating of a species to high priority. <p>'good number' is currently undefined</p>	SCC, 2002 Joy, 1997
	Dragonflies/damselflies	
Vulnerable	<p>Species of local concern in Shropshire. Restricted populations that could easily be upset by habitat changes.</p> <p>'good number' is currently undefined</p>	SCC, 2002
	Other invertebrates	
Nationally Rare (Red Data Book)	RDB categories 1-3. Endangered, Vulnerable and Rare (at risk) species, none of which are likely to exist in more than 15 10km squares in the Ordnance Survey national grid of Britain, or in more than 15 10km squares but occupying small areas of especially vulnerable habitat.	SCC, 2002
Nationally notable 'a' species	Nationally Notable Invertebrates that occur in less than 30 10km squares in the Ordnance Survey national grid of Britain	SCC, 2002
	Hoverflies	

<p>1. European woodland quality indicators – species considered important in a European context.</p>	<p>Brachyopa bicolour (Worcs Wyre Forest) <i>Caliprobola speciosa</i> Callicera aurata (SO89 Staffordshire 1988) <i>C. rufa</i>, <i>C. spinolae</i> Chalosyrphus eunotus Ferdinandea ruficornis <i>Hammerschmidtia ferruginea</i> <i>Myolepta potens</i> Pocota personata <i>Psilota anthracina</i></p>	<p>Nigel Jones S.I.G 2006</p>
<p>2. Species in the Biodiversity Action Plan (BAP)</p>	<p><i>Anasimyia interpunctata</i> RDB3 wetland A. lunulata N wetland SJ01 Montgomeryshire 1988 Brachyopa bicolour (Worcs Wyre Forest) RDB3 saproxylic B. insensilis N saproxylic B. pilosa (Worcs Wyre Forest) N saproxylic <i>Brachypalpus laphriformis</i> N saproxylic <i>Calliprobola speciosa</i> RDB1 saproxylic Callicera aurata (SO89 Staffordshire 1988), RDB3 saproxylic <i>C. spinolae</i> SAP*, RDB1 saproxylic Chalcosyrphus eunotus RDB2 saproxylic <i>Cheilisia barbata</i> (SJ72 Staffordshire 1980) N phytophagous C. cynocephala N phytophagous C. mutabilis N phytophagous C. nebulosa RDB3 phytophagous <i>C. nigripes</i> N phytophagous <i>C. pubera</i> N phytophagous <i>C. psilophthalma</i> status unknown phytophagous C. soror N phytophagous (truffles) <i>C. uviformis</i> status unknown Phytophagous C. velutina N phytophagous <i>Criorhina asilica</i> N saproxylic C. ranunculi N saproxylic Chrysotoxum elegans (Worcs Wyre Forest) RDB3 ants <i>C. octomaculatum</i> SAP*, RDB2 ants, heath <i>C. vernale</i> RDB1 ants Doros profuges- 1896 record from Worcs Wyre Forest SAP*, RDB2 ants? <i>Eristalis cryptarum</i> SAP*, RDB2 blanket bog <i>E. rupium</i> N wetland <i>Eupeodes bucculatus</i> N E. bucculatus N E. nitens N Ferdinandea ruficornis saproxylic Heringia pubescens N Lejogaster tarsata 1957 record N wetland <i>Lejops vittata</i> SAP, RDB2 wetland Melanogaster aerosa N wetland Mallota cimbiciformis N saproxylic Meligramma euchromum N M. guttatum N, 1922 record M. trianguliferum N <i>Microdon anilis</i> N ants M. devius (worcs Wyre Forest 1899) SAP, RDB2 ants <i>M. mutabilis</i> N ants <i>M. myrmicae</i> N ants, wetland <i>Myolepta dubia</i> RDB2 saproxylic</p>	

<p>3. English hoverflies not allocated to Priority Habitats, but possibly useful for site quality evaluation:-</p>	<p><i>M. potens</i> SAP,RDB1 saproxylic <i>Neoascia geniculata</i> N wetland <i>N. interrupta</i> RDB3 wetland <i>N. obliqua</i> N <i>Paragus albifrons</i> RDB2 <i>P. tibialis</i> N heath <i>Parhelophilus consimilis</i> (SJ34 Denbighshire) RDB2 wetland <i>Parasyrphus nigratarsis</i> SAP,RDB1 wetland <i>Pelecrocera tricincta</i> SAP,RDB3 heath <i>Platycheirus amplus</i> status unknown wetland <i>P. immarginatus</i> N wetland <i>P. perpallidus</i> N wetland <i>P. podagratus</i> (SJ81 Staffordshire) N wetland <i>Pocota personata</i> (Shrops1912 SJ51& SJ20 Powys Castle 1996) SAP,RDB2 saproxylic <i>Psilota anthracina</i> RDB2 saproxylic <i>Orthonevra brevicornis</i> N wetland <i>O. geniculata</i> N wetland <i>Sphaerophoria loewi</i> RDB2 wetland <i>S. potentillae</i> RDBK Culm moor <i>S. virgata</i> N heath <i>Sphegina verecunda</i> N saproxylic <i>Volucella inflata</i> N saproxylic <i>Xylota abiens</i> N saproxylic <i>X. florum</i> N saproxylic <i>X. tarda</i> (Worcs Wyre Forest 1993) N saproxylic <i>X. xanthocnema</i> (SJ34Denbighshire) N saproxylic</p> <p><i>Cheilisia carbonaria</i> (Worcs Wyre Forest, 1883) N phytophagous, woods in part</p> <p><i>C. semifasciata</i> RDB3 phytophagous, woods – known from three sites in Shropshire. In the UK, now only known from North Wales and Shropshire. The UK population is unique in Europe, as UK larvae feed inside <i>Umbilicus rupestris</i> (Navelwort), whereas in Europe larvae feed inside <i>Sedum</i>.</p> <p><i>Didea alneti</i> (Worcs Wyre Forest 1934) SAP,RDB1 aphidophagous, woods <i>D. intermedia</i> N aphidophagous, woods <i>Epistrophe diaphana</i> N aphidophagous <i>Eumerus ornatus</i> SAP,N phytophagous, woods <i>Melangyma barbifrons</i>N aphidophagous, woods <i>M. ericarum</i> RDB3 aphidophagous, woods <i>Melanostoma dubium</i> N aphidophagous?, upland <i>Eupodes lapponicus</i> N aphidophagous, woods <i>Eupodes nielsenii</i> (Worcs Wyre Forest) N aphidophagous, woods <i>Heringia brevidens</i> N aphidophagous, poplars <i>Heringia latitarsis</i> N aphidophagous, woods <i>Heringia. verrucula</i> N aphidophagous, woods <i>Pipiza lugubris</i> N aphidophagous wet woodlands/wetlands <i>Pipizella maculipennis</i> RDB3 aphidophagous <i>P. virens</i> N aphidophagous <i>Platycheirus discimanus</i> N aphidophagous, woods <i>Platycheirus melanopsis</i>RDB3 aphidophagous, upland <i>Platycheius sticticus</i> N aphidophagous, woods <i>Rhingia rostrata</i> RDB3 dung feeding?, woods – Welsh borders a stronghold</p>	
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	<i>Triglyphus primus</i> N aphidophagous, ruderal – brownfield sites <i>Volucella inanis</i> N wasps nests <i>Xanthandrus comtus</i> N aphidophagous <i>Xylota jakutorum</i> N saprophagous, conifers	
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	<p>Ladybirds</p> <p>LADYBIRDS – Current known status in the British Isles and Shropshire and criteria for selection of Wildlife Sites</p> <p>1. Introduction</p> <p>1.1 Ladybirds are generally poorly recorded. It is only recently that a dedicated recording scheme has been established and as with all such schemes, particularly in the early days, the records relate as much to the distribution of recorders as of the species concerned. For this reason many of the statements made in this paper are based on minimal records and could therefore contain considerable inaccuracies.</p> <p>2. The British Species</p> <p>2.1 Forty six coccinellid species are usually accepted as being British of which twenty six are recognisable as ladybirds (Majerus et al, 2006). The majority are widespread although some are at the same time local. Further points on the overall list are:</p> <ul style="list-style-type: none"> • The Thirteen-spot ladybird <i>Hippodamia 13-punctata</i> is now believed to be extinct, the most recent record being around 1950 (Majerus & Kearns, 1989). • The Five-spot ladybird <i>Coccinella 5-punctata</i> is the only species described as rare. It occurs locally on unstable river shingles in Wales and Scotland (see 4.2 below). • The Scarce seven-spot ladybird <i>Coccinella magnifica</i> is described as scarce, local in SE but rare in the N & W.(see 4.2 below) • The Harlequin ladybird <i>Harmonia axyridis</i> is a recent immigrant which is spreading rapidly from the SE. It will most likely be spread on plants to this region and has recently been found in 100km. grid square SJ on the Lancashire/Cheshire border. • The Bryony ladybird <i>Epilachna argus</i> is another recent immigrant which arrived unaided in the SE, is still local there but spreading. It is classified as scarce. <p>2.2 Another five species, which are classified as locally common or scattered, are nevertheless of interest as they have occurred in Shropshire or just over the county borders. Details of their status is given in 3.2 & 4.1 below.</p> <p>3. Shropshire Species</p> <p>3.1 With the aid of Peter Brown, the UK Ladybird Survey Project Officer, the current survey database and the former Invertebrate Site Register – England have been examined for records.</p> <p>3.2 From this exercise it appears that fifteen species are currently known to occur in Shropshire/VC40. From discussions with Viv Geen it appears that not all species records are necessarily on the national database so there may be inaccuracies here. Of these fifteen species two are from the group referred to in 2.2 above:</p> <ul style="list-style-type: none"> • The Water ladybird <i>Anisosticta 19-punctata</i> has been 	<p>Ian Thompson 11th August, 2006</p>
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	<p>recorded five times in the county between 1979 and 1985. In no case is the recorder known. It is probably more widespread than the records suggest. It is found on reeds and other waterside vegetation. It is scarce in the N & Wales – so definitely one to look out for.</p> <ul style="list-style-type: none"> • The Heather ladybird <i>Chilocorus 2-pustulatus</i> has a single record from Wem Moss in 1988. Again no recorder is given. I understand from Viv Geen that there has been a recent record come into the Trust for this species which is in addition to the above. This is a declining species of heather heathland on deciduous trees so should be worth looking for. It is a small insect but the potential area of suitable habitat is quite considerable so this is likely to be primarily a case of under recording – albeit that it may be only thinly distributed. <p>4. Near Neighbours</p> <p>4.1 The remaining local/scattered species referred to in 2.2 have all been recorded in adjacent counties:</p> <ul style="list-style-type: none"> • The Hieroglyphic ladybird <i>Coccinella hieroglyphica</i> has one record just over the Welsh border. This is another species of heather heathland. • The Eighteen-spot ladybird <i>Myrrha 18-guttata</i> has one record adjacent to the border in Herefordshire. This species is found in mature Scots Pine. • The Adonis ladybird <i>Hippodamia variegata</i> has two records just over the border with Staffordshire. This species is increasing and is found in diverse habitats on low plants and shrubs. <p>4.2 The rare and scarce species in 2.1 above both have records in adjacent counties.</p> <ul style="list-style-type: none"> • The Scarce Seven-spot ladybird <i>C. magnifica</i>. There are old records for this in a 10km square that straddles the Shropshire/Worcestershire border but the records are logged as Worcestershire. • The Five-spot ladybird <i>C. 5-punctata</i> has two records as recent as 2005 just over the Welsh border on the River Severn. Until 1987 this species had only been recorded in two 10km squares in England and two in Scotland, the last of the latter in 1953. It was discovered in W. Wales in 1987 in good numbers in four 10km squares. The species is probably quite widely, if thinly, distributed in suitable habitats. It was also rediscovered in Scotland in the same year (Majerus & Kearns, 1989). The two recent records from E. Wales may therefore indicate a range expansion or merely discovery of a population which has always been present. Suitable habitat occurs on several border streams. 							
	Great crested newt							
Good breeding population	Sites where night (torch) counts exceed 10 individuals.	NCC, 1989 and Clements D & Price R, 2000						
	Other amphibians							
Good breeding population	<table border="0"> <tr> <td>palmete or smooth newt</td> <td>torch count of adults</td> <td>50+</td> </tr> <tr> <td>common frog/toad</td> <td>count of adults</td> <td>100+</td> </tr> </table>	palmete or smooth newt	torch count of adults	50+	common frog/toad	count of adults	100+	after NCC, 1989 and Clements D & Price R, 2000
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palmete/smooth newt	torch count of adults	100+						
common frog/toad	count of adults	500+						

	Bats	
Significant breeding or wintering roosts	Brown long-eared bat at least 10 individuals Pipistrelle bat at least 20 individuals All other bat species all breeding and wintering roosts	after Clements D & Price R, 2000 and SCC, 2002
	Breeding birds	
Nationally important	species included on the Red Data list because: <ul style="list-style-type: none"> • they occur in Britain in internationally significant numbers; • they are scarce as British breeders (below 300 pairs); • they are declining in breeding numbers; • they are restricted in distribution to vulnerable sites or habitats. 	SCC, 2002

Appendix 2 contd

Breeding Bird Assemblages for Key Habitats

Woodland

Grey Heron	3	Blackcap	1
Honey Buzzard	5	Wood Warbler	2
Red Kite	5	Chiffchaff	1
Goshawk	5	Goldcrest	1
Sparrowhawk	2	Firecrest	5
Buzzard	3	Spotted Flycatcher	1
Osprey	5	Pied Flycatcher	2
Hobby	4	Long-tailed Tit	1
Woodcock	2	Marsh Tit	1
Stock Dove	1	Willow Tit	2
Cuckoo	2	Coal Tit	1
Tawny Owl	2	Nuthatch	2
Long-eared Owl	3	Treecreeper	1
Nightjar	3	Jay	1
Green Woodpecker	2	Raven	3
Great Spotted Woodpecker	2	Siskin	2
Lesser Spotted Woodpecker	3	Redpoll	1
Tree Pipit	1.5	Crossbill	3
Nightingale	3	Bullfinch	1
Redstart	1	Hawfinch	3
Garden Warbler	1		
National Index Value	39	Shropshire Index Value	25

Upland Habitats

Little Grebe	2.5	Curlew	2
Teal	3	Redshank	2
Goosander	3.5	Common Sandpiper	2
Hen Harrier	4	Short-eared owl	3
Buzzard	3	Grey Wagtail	2
Merlin	4	Dipper	2
Peregrine	4	Whinchat	2
Red Grouse	1	Stonechat	2
Golden Plover	2	Wheatear	2
Dunlin	3	Ring ouzel	2.5
Snipe	2	Raven	3
National Index Value	34	Shropshire Index Value	20

Heathland

Hobby	4	Tree Pipit	1.5
Snipe	2	Whinchat	2
Curlew	2	Stonechat	2
Cuckoo	2	Wheatear	2
Long-eared Owl	3	Grasshopper Warbler	2
Nightjar	3	Dartford Warbler	4
Woodlark	4	Linnet	1
National Index Value	20	Shropshire Index Value	9

Lowland Wet Grassland

Mute Swan	3	Curlew	2
Shelduck	2	Redshank	2
Gadwall	4	Cuckoo	2
Teal	3	Yellow Wagtail	1
Garganey	5	Whinchat	2
Shoveler	4	Grasshopper Warbler	2
Lapwing	1	Sedge Warbler	1
Snipe	2	Reed Bunting	1
National Index Value	16	Shropshire Index Value	7

Fen (where this habitat occurs in combination with open water, use the open waters list instead.)

Little Grebe	2.5	Snipe	2
Bittern	5	Cuckoo	2
Gadwall	4	Whinchat	2
Teal	3	Cetti's Warbler	4
Garganey	5	Grasshopper warbler	2
Shoveler	4	Sedge warbler	1
Pochard	4	Reed warbler	2
Marsh Harrier	5	Reed bunting	1
Water Rail	3		
National Index Value	16	Shropshire Index Value	8

Open Water

Little Grebe	2.5	Water Rail	3
Great Crested Grebe	3	Little ringed Plover	4
Black-necked Grebe	5	Ringed Plover	3
Bittern	5	Snipe	2
Grey Heron	3	Redshank	2
Mute Swan	3	Common Tern	3
Shelduck	2	Cuckoo	2
Gadwall	4	Kingfisher	3
Teal	3	Yellow Wagtail	1
Pintail	5	Grey Wagtail	2
Garganey	5	Cetti's Warbler	4
Shoveler	4	Grasshopper warbler	2
Pochard	4	Sedge Warbler	1
Tufted Duck	3	Reed Warbler	2
Marsh Harrier	5	Reed Bunting	1
National Index Value	31	Shropshire Index Value	16

Scrub (excluding heath)

Turtle Dove	1.5	Stonechat	2
Cuckoo	2	Grasshopper Warbler	2
Long-eared Owl	3	Whitethroat	2
Nightjar	3	Lesser Whitethroat	2
Tree Pipit	1.5	Garden Warbler	1
Nightingale	3	Blackcap	1
Whinchat	2	Linnet	1
National Index Value	15	Shropshire Index Value	7

Appendix 4

Guidelines for undertaking Observational Studies and recording evidence of Social Value

Access	This can be assessed by examining the evidence of people using the site. Features to record include:- Numbers of people seen on the site, type of people (children, adults, elderly), presence of footpaths, desire lines, types of entry points
Aesthetic Quality	Are there good views into and out of the site? Photographs can take some of the subjectivity out of assessing these criteria. Is the site varied, with a range of landscape elements, or alternatively does the site lack variety, or does it give a feeling of wilderness? At particular times of the year does the site provide a feature? What do the users say about the sites?
Physical Value	Are people using the site to gain physical exercise? Dog walking, jogging, play, site management works? Observe not only numbers of people, but also what they are doing. Ask people how they use the site.
Social Value	Are the people using the site for social interaction (chatting, sitting, watching the world go by)? What types of people are using the site (age, sex, ethnic background, special needs)?
Sense of Ownership	Do the owners use and value the site? Is the site a focus for activities (campaigns, friends of groups)?
Educational Value, Formal and Informal	Is the site used by schools/colleges/universities etc at the moment? What facilities are available on the site (visitors centre, rangers, nature trail). Is the site close to schools which could use the area? Has the site helped people develop new skills (campaigning, land management, biological recording)?
Recorded History	Does the site have a well documented history? Not only in terms of its scientific history, but also in its social, cultural and management history. Wildlife Trusts, recording groups and local history libraries are all sources of evidence
Potential Value	Are there realistic ways in which the social value of a site can be enhanced?

A procedure for mapping site use to record observational studies has been developed by the Wildlife Trust for Birmingham & the Black Country.